

REMARKS

The Office action dated February 17, 2009, is acknowledged. Claims 1-15 are pending in the instant application. According to the Office action, each of these claims have been rejected. The claims have been amended as set forth above, without adding new matter, to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Reconsideration is respectfully requested in light of the following remarks.

Rejection of Claims 1-15 under 35 U.S.C. 103(a)

Claims 1-6, 8, 11-15 have been rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 4,773,581 (Ohtsu et al.) in view of U.S. Publication No. 2004/0134961 (Wolf et al.) The Examiner argues that Ohtsu et al. teaches each and every limitation of the aforementioned claims, except for the first piston performing compression operation of air/fuel gas mixture. The Examiner states that Wolf et al. teaches a fastener driving tool including first printing cylinder (29) having a first piston (30) capable of compressing and transferring gas/air mixture to the combustion chamber, and valves (25, 26) as shown in Fig. 1. The Examiner argues it would have been obvious to modify Ohtsu's first cylinder with the disclosure of Wolf to increase the compression and combustion rate of the gas/air mixture to propel the drive rod.

Claim 7 has been rejected under 35 U.S.C. 103(a) as being obvious over Ohtsu et al. and Wolf et al. as applied to claim 1, and further in view of Wandel et al. (U.S. 3,809,307).

Claims 9-10 have been rejected under 35 U.S.C. 103(a) as being obvious over Ohtsu et al. and Wolf et al. as applied to claim 1, and further in view of Golsch. (U.S. 4,932,480).

Wolf et al. discloses a combustion-engined setting tool for driving fastener elements. It utilizes an electrically driven device (a compressor) 5 for pre-compressing air. This compressed air is stored in reservoir 22. It is delivered to combustion chamber 11 via valve 28, whilst fuel is delivered to combustion chamber 11 via valve 18. However, at paragraph [0017] it states that both air and fuel can be pre-compressed in the compressor, and that air (oxidation means) or the air-fuel mixture can be compressed directly in the combustion chamber 11.

Applicant has amended independent claims 1 and 15 above further distinguish the present invention from the cited references. Paragraph [00039] describes a feature of the present invention which includes purging of any residual exhaust gases. Paragraph [00039] states “Electro magnetic exhaust valves 42 and 45 are energized during the upward progression of piston 24 causing valve head 45 to open, allowing the inward flow of fuel/gas air mixture through valve 32 to purge residual exhaust gases from combustion space in cylinder B, see Fig 7.” Claims 1 and 15 have been amended to include language describing this feature, including the limitation of a combustion space and an exhaust valve, where during the initial transfer of air/fuel gas mixture to the second delivery cylinder the exhaust valve is opened thereby allowing the air/fuel gas mixture to purge any residual exhaust gases out of the combustion space via the exhaust valve, and after the exhaust valve closes and the air/fuel gas mixture transfer is complete.

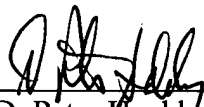
The combination of Wolf et al. and Ohtsu et al. does not render the claimed invention obvious. Wolf is wholly silent on exhaust cycles and on purging residual gases. Wolf does not teach or suggest that following an air/fuel gas mixture introduced and compressed in a first cylinder, and during its initial transfer to the combustion chamber, that the air/fuel gas mixture is used to initially purge residual exhaust gases via an exhaust valve in the second cylinder (combustion chamber) as shown in Fig 7 of the present application. Therefore, claim 1 and its dependent claims and claim 15 should be allowed since the combination of the prior art does not teach each and every limitation in the presently amended claims. Withdrawal of this rejection is respectfully requested.

Conclusion

For the foregoing reasons it is believed that the present application, with the claims in their amended form, is in condition for allowance, and such action is earnestly solicited. The Examiner is invited to call the undersigned if there are any remaining issues to be discussed which could expedite the prosecution of the present application.

Respectfully submitted,

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